

Competition and Antitrust: A Productivity-Based Approach

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I. INTRODUCTION

This paper seeks to contribute thinking on how the intellectual foundations of antitrust might be updated, based on a large body of theoretical and empirical research on company strategy, competition, and economic development. The aim is to outline a new direction for antitrust that can be incorporated into government policy and legal practice and pursued in litigation and legislation, both in the United States and internationally. This new thinking sets forth productivity growth as the basic goal of antitrust policy, and employs tools like industry structure analysis and locational analysis to evaluate potential impacts on competition. While there appears to be broad consensus on how to deal with much anticompetitive behavior such as deceptive practices and cartel formation, the current fault line in antitrust is the treatment of mergers. This paper therefore focuses on the evaluation of mergers, though the same framework can be applied to evaluating joint ventures, other combinations, and other competitive practices. Finally, it should be noted that this paper is concerned principally with the content of antitrust, not the many important issues involved in structuring antitrust agencies and designing processes of enforcement.

Section II argues that the true benefits of healthy competition are not fully articulated in much antitrust analysis. By linking competition to a nation's standard of living through productivity growth, it becomes apparent that far more is at stake in protecting competition than short-term consumer welfare defined by price-cost margins. Empirical evidence is provided to highlight the importance of protecting the vitality of competition. Furthermore, it is argued that *local* competition within a nation is particularly crucial for competitiveness, even in the era of globalization.

Section III proposes that productivity growth become the new standard for antitrust, and reassesses the hierarchy of antitrust goals accordingly. Since healthy competition will foster productivity growth, antitrust must be equipped with adequate tools and frameworks for evaluating the health of competition. Yet frameworks broader than current practices resting in relevant market definitions and ability to elevate price above cost are required. So called "five forces" analysis is offered as a broader tool for evaluating overall industry competition, while the diamond framework for locational competitiveness is offered for evaluating the health of *local* competition.

In Section IV, we turn to the analysis of mergers, outlining a three-level merger evaluation process that incorporates the productivity growth standard and the tools for evaluating the health of competition mentioned above. Section V offers a short case study of a merger evaluation, using the new procedure. Finally, Section VI addresses some recent issues more specific to U.S. antitrust policy.

The essential role of competition and antitrust policy in competitiveness is evident in recent research on industry competition and economic development. My conviction from working both with companies and public policymakers in many countries is that open competition, stimulated by strict antitrust enforcement, is essential not only to national

prosperity, but to the health of companies themselves. Yet antitrust seems to be drifting. Antitrust policy is being challenged by skeptics who are mounting attacks on the need for antitrust under the guise of globalization or the requirements of the “new economy.” Also, the theoretical and empirical literature on competition has moved beyond seller concentration, price-cost margins, and other ideas central to current enforcement.¹

It is an important moment to reinvigorate antitrust. Not to say that antitrust enforcement has been lax, nor that skilled practitioners have not been able to apply the law with great sophistication. However, recent court rulings and public debate suggest that the foundations of antitrust theory and practice are wearing thin. The goals of antitrust and its link to society’s goals are often not convincingly articulated. The benefits of competition that underpin antitrust have not been made clear, and the tools for measuring impacts on competition are frequently controversial. Too often the discussion between business and government in antitrust proceedings concerns arcane matters such as HHI that erodes the legitimacy of antitrust with the private sector. By relying too heavily on narrowly conceived consumer welfare theory, antitrust analysis may be overlooking some of the most important benefits of competition for society. Antitrust is not living up to its full promise in deterring behavior that is not in society’s interest.

My aim here is not to offer a comprehensive treatise, settle all of the issues raised, nor do justice to the scholarly or practitioner literature. Instead, the intention is to stimulate further dialogue and analysis.

¹ See Sections II and III.

II. COMPETITION, COMPETITIVENESS, AND STANDARD OF LIVING: THE ROLE OF ANTITRUST

II.1. Competition, productivity growth, and standard of living

The stated role of antitrust policy is to promote and protect competition in the name of consumer welfare. Yet the rationale is frequently unclear, misunderstood, or too narrow in scope. While protecting short-run consumer welfare measured by price-cost margins is undeniably important, the benefits of healthy competition are in fact broader and more essential to consumers and to society. The fundamental benefit of competition is to drive productivity growth through innovation, where innovation is defined broadly to include not only products, but also processes and methods of management. Productivity growth is central because it is the single most important determinant of long-term consumer welfare and a nation's standard of living.

The underpinnings of economic prosperity are becoming better understood as a result of continuing research. While sound macroeconomic policies and stable political and legal institutions represent important preconditions for prosperity and competitiveness, they are necessary but not sufficient conditions for a prosperous economy. Prosperity is actually generated at the *microeconomic* level – in the ability of firms to create valuable goods and services productively that will support high wages and high returns to capital.²

The goal of economic development is to achieve long term, sustainable improvement in a nation's standard of living, which can be approximated by per capita national income (GDP per capita).³ Per capita income is determined by the productivity of a nation's economy, where productivity is defined as the total value of the goods and services (products) produced per unit of the nation's human, capital and physical resources. A nation's overall productivity is composed of the productivity of its firms, both those involved in traded industries and those involved in purely local commerce. The crucial issue, then, is how to create the conditions for rapid and sustained productivity growth in a nation's firms.

Since the seminal contributions of Schumpeter (1943), Solow (1956) and Abramovitz (1956), it is widely understood that the only means of achieving sustained productivity growth in an economy is through innovation.⁴ Innovation provides products and services

² M.E. Porter, "The Microeconomic Foundations of Economic Development," in *The Global Competitiveness Report 1998*, 38 (Geneva: World Economic Forum, 1998). See also M.E. Porter, "Attitudes, Values, Beliefs, and the Microeconomics of Prosperity," in *Culture Matters: How Values Shape Human Progress* (L.E. Harrison & S.P. Huntington eds., 2000).

³ While income is the best available measure, other things contribute to national standard of living besides wages and returns to capital, such as the quality of health care, the absence of extreme income inequality, and environmental quality.

⁴ J. Schumpeter, *Capitalism, Socialism, and Democracy* (2d ed. 1943); R. Solow, "Technical Change and the Aggregate Production Function," 39 *Review of Economics and Statistics* 312 (1957); R. Solow, "A Contribution to the Theory of Economic Growth," 70 *Quarterly Journal of Economics* 65 (1956);

(continue)

of ever-increasing consumer value, as well as ways of producing products more efficiently, both of which contribute directly to productivity.

Innovation, in this broad sense, is driven by competition. While technological innovation is the result of a variety of factors, there is no doubt that healthy competition is an essential part. One need only review the dismal innovation record of countries lacking strong competition to be convinced of this fact. Vigorous competition in a supportive business environment is the only path to sustained productivity growth, and therefore to long term economic vitality.

Productivity growth, then, is the missing, unstated link between competition and national standard of living. This provides the soundest explanation for why antitrust must protect competition: it is the key to a nation's economic prosperity. Productivity growth thinking also makes it clear that the focus of antitrust thinking should be on the long-term trajectory of product value and price, not just current consumer welfare measured by short-run prices. The following sections outline how the central role of productivity in development and societal welfare can be applied to antitrust and competition policy.

II.2. Importance of Industry Competition: empirical evidence

Recent empirical findings verify the importance of competition to raising and maintaining standard of living. This evidence squares well with my own experience. Competition really matters, in the new economy and the old economy, and in all types of countries.

One body of empirical evidence comes from *The Global Competitiveness Report 2000*, an annual study of competitiveness in 58 countries including all the OECD countries as well as many developing countries.⁵ Data from the report are drawn from a survey of more than 4,000 corporate and other leaders, including a representative sample from each country. The survey is qualitative, but represents a large body of expert opinion on important dimensions of economic policy, for which there are no quantitative measures.

Figure 1 reproduces some of the statistical findings from the Report. For all three years in which this analysis has been conducted, the effectiveness of antitrust policy⁶ proves to be one of the variables with the strongest positive association with the variation in GDP per capita across countries. This holds even in the subsample of developing

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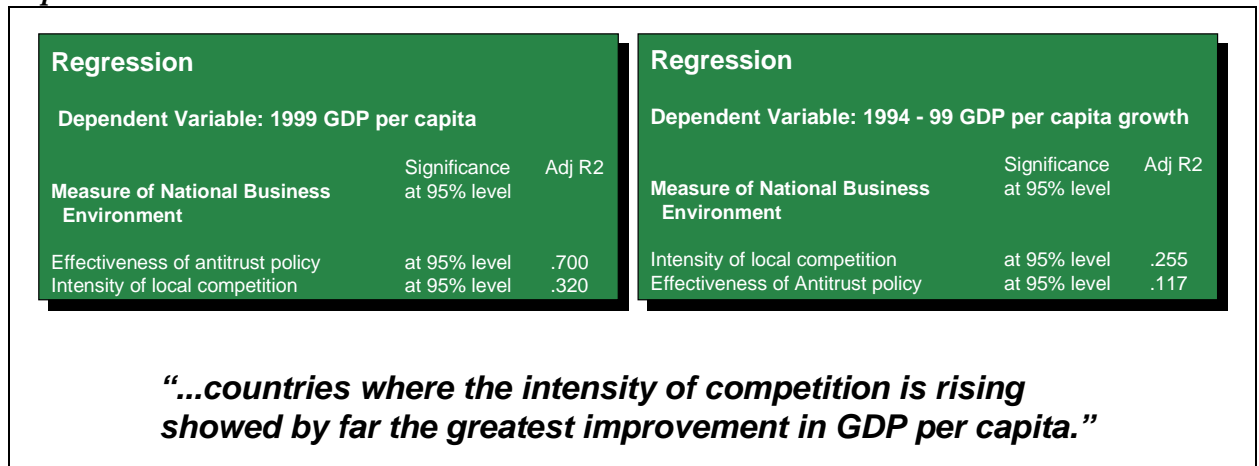
M. Abramowitz, "Resource and Output Trends in the United States since 1870," 46 *American Economic Review* 5 (1956).

⁵ M.E. Porter, "The Current Competitiveness Index: Measuring the Economic Foundations of Prosperity," in *The Global Competitiveness Report 2000* (Geneva: World Economic Forum, 2000).

⁶ In *id.* at 312, the effectiveness of antitrust policy was measured in a survey by responses to question 10.14, "The anti-monopoly policy effectively promotes competition," using a scale from 1-7, "strongly disagree" to "strongly agree."

economies, an indication that antitrust is also important for poor countries, rather than just a luxury needed only in wealthy ones. The report also includes a survey question about the intensity of local competition. While the question is imperfect because of possible ambiguities in its interpretation by respondents, it also has a highly significant positive association with GDP per capita.

Figure 1 Competition and Prosperity: Findings from *The Global Competitiveness Report*



Source: M.E. Porter, “The Current Competitiveness Index: Measuring the Microeconomic Foundations of Prosperity”, in *The Global Competitiveness Report 2000* (Geneva: World Economic Forum, 2000).

Turning to analysis of the rate of *growth* in GDP per capita, the effectiveness of antitrust policy and the intensity of competition are again highly significant variables and contribute substantially to explained variance. Note that the proportion of variance in GDP per capita growth rate that can be explained is inherently less than for the level of GDP, because growth in GDP is more sensitive to a wide variety of shocks and short-term macroeconomic influences. We find that the competition/antitrust policy measures are as or more associated with prosperity as transportation infrastructure, telecom infrastructure, IT readiness, and the like. In a first difference analysis, countries where the intensity of competition is rising showed registered the greatest improvement in GDP per capita. All these findings are consistent: competition and a vigorous antitrust policy are strongly associated with national prosperity.

This research provides some positive evidence of the importance of strong antitrust for prosperity. There is also ample negative evidence to be cited. For example, Japan is a country with a history of weak antitrust enforcement, legal cartels, and extensive government-sponsored collaborative research projects among companies. During the height of the Japanese economic miracle, the case of Japan was a principal argument advanced in the United States for weakening antitrust law – for example, in allowing potentially anticompetitive collaborative activity.⁷

⁷ M.E. Porter, H. Takeuchi & M. Sakakibara, *Can Japan Compete?* (2000).

Yet one of the major findings of a recent book is the steep price that Japan has paid for a lax antitrust policy.⁸ Our research revealed that weak antitrust enforcement did not explain Japanese competitiveness, but was in fact an explanation for why certain industries in Japan were uncompetitive. Industries where competition was limited by Japanese government policy were uncompetitive. We also collected data on all the legal cartels in post-World War II Japan, and found that the industries in which cartels occurred were, with few exceptions, uncompetitive. We also collected data on all government-sponsored cooperative research projects, which involved several if not most industry competitors. We found that those industries in which cooperative research projects occurred were no more likely than the average industry to be competitive, and many cooperative research projects actually worked against industry competitiveness. There have been many collaborative projects in the West involving multiple industry competitors growing out of the efforts to emulate the Japanese case, such as the electric vehicle project. With few if any exceptions, these have proven disappointing. The notion that Japan was competitive because of weak antitrust is resoundingly rejected.

Figure 2 highlights some additional data drawn from our study of Japan. We explored the relationship between the intensity of domestic competition and world export share in a broad sample of Japanese industries. All of the industries considered were global in scope. Industries able to command a high world export share were decreed to be highly productive.

Instead of relying on market structure measures such as seller concentration to proxy the intensity of competition, we used the extent of fluctuations in domestic market share among leading firms over an 18-year period. The fluctuation in market share among leading competitors – controlling for outside shocks – provides a direct and far more compelling indication of the intensity of competition.⁹ We found that domestic market share variability was by far the most powerful influence on Japanese world export share, dominating conventional measures of comparative advantage such as skilled labor intensity and capital intensity. The intensity of competition at home, then, was the strongest influence on Japanese competitiveness abroad. These statistical findings are consistent with hundreds of industry case studies that have been conducted on the determinants of competitiveness at the country level, as well as research on national and regional economic development.¹⁰

Interestingly, we found that seller concentration had no significant relationship with Japanese world export share.¹¹ Nor was it significantly correlated with the extent of

⁸ *Id.* See also M. Sakakibara & M.E. Porter, “Competing at Home to Win Abroad: Evidence from Japanese Industry,” 83 *Review of Economics and Statistics* 310 (2001).

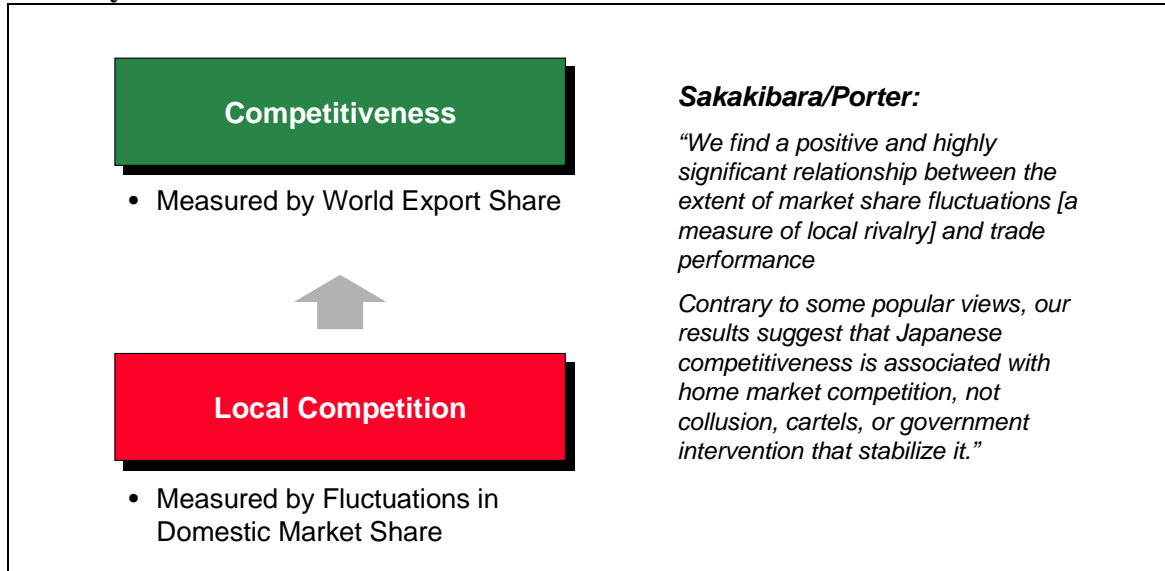
⁹ See generally R. Caves & M. Porter, “Market Structure, Oligopoly, and Stability of Market Shares,” 26 *Journal of Industrial Economics* 289 (1978). For a detailed application to Japan, including definitions, sources of data, cause and effect issues, see Sakakibara & Porter, *supra* note 8.

¹⁰ See, e.g., “Clusters and Competition: New agendas for Companies, Governments, and Institutions” in M.E. Porter, *On Competition* (1998), which contains an extensive bibliography.

¹¹ Sakakibara & Porter, *supra* note 8.

domestic market share fluctuations. These results are consistent with other research which raises doubts about the use of seller concentration as a proxy for the vitality of competition.¹²

Figure 2 Competition and International Competitiveness: Evidence from Japanese Industry



Source: M. Sakakibara & M.E. Porter, "Competing at Home to Win Abroad: Evidence from Japanese Industry", 83 *Review of Economics and Statistics* 310, 318, 319 (May 2001).

II.3. Importance of Local Competition¹³: Externalities, cluster theory, and the link between clusters and innovation

The Japanese research and other evidence suggest that, contrary to popular belief, *local* competition matters in global industries. Even where firms compete across borders, the configuration of locally based competitors and the vitality of competition in the local market are crucial to productivity and competitiveness. Local competition creates numerous positive externalities for industries and industry clusters, thus explaining its significant impact on firm competitiveness.

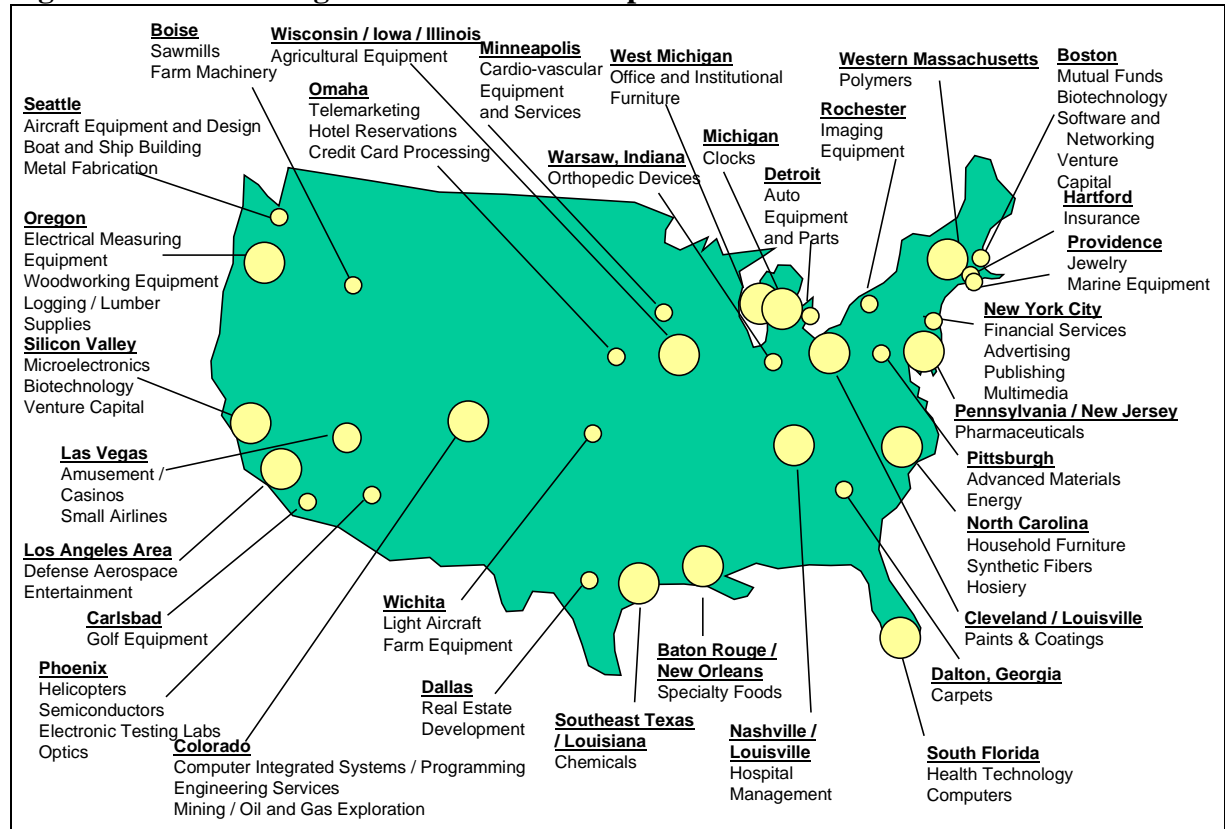
Many industries can be considered global in competitive scope, which is often taken to imply that a firm's location is of no importance to the health of competition. Yet the actual distribution of firms belies this view. We observe a strong tendency for successful

¹² See, e.g., K. Ewing, "The Soft Underbelly of Antitrust," *Antitrust Report*, Sept. 1999 at 2; B. Harris & D. Smith, "The Merger Guidelines v. Economics: A Survey of Economic Studies," *Antitrust Report*, Sept. 1999 at 23; C. Weller, "An Evolution of the Merger-JV Guidelines: The Productivity Paradigm As A Positive Antitrust Policy for Competitiveness and Prosperity," *American Bar Association, Perspectives of the Task Force on Fundamental Theory* (forthcoming, 2001).

¹³ It should be noted that the term local can apply to geographic areas ranging from a small county to a group of neighboring countries. The relevant economic area depends on geographic distance and the scope of local externalities.

firms in a particular industry to cluster in particular countries, often along with firms in related industries. The schematic map of the U.S. clusters in figure 3 shows that geographic clustering can occur even in sub-national regions within countries. This ubiquitous phenomenon reveals powerful insights into the role of location in healthy competition.

Figure 3 Selected Regional Clusters of Competitive U.S. Industries



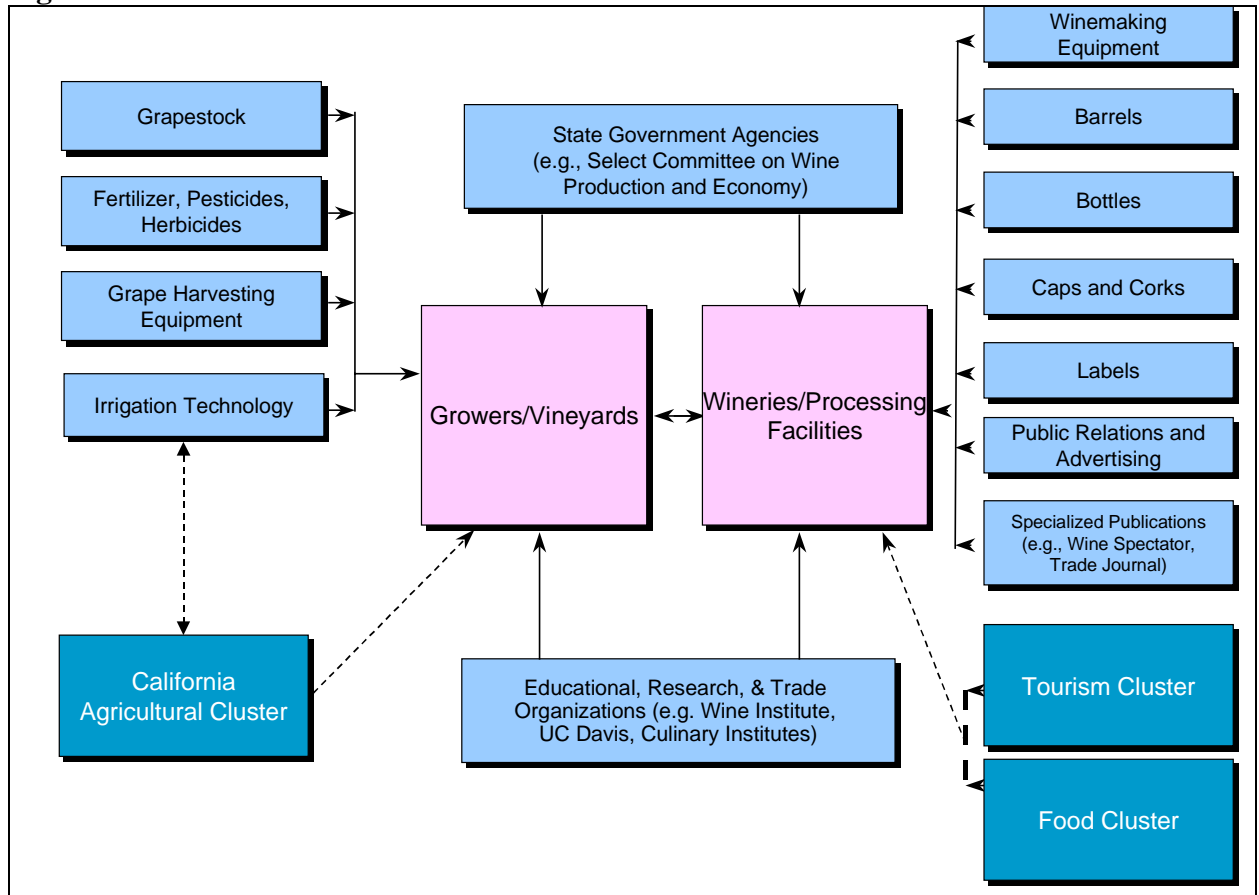
Firms cluster in particular locations not because of traditional comparative advantages stemming from natural resources or pools of cheap labor. Rather, they obtain *competitive* advantages by locating in areas benefiting from the strong presence of other firms in the industry, firms in related industries, and the presence of specialized inputs, information, and institutions. The explanation for geographic clustering is that local competition provides an exceptional stimulus to productivity growth that is extremely valuable to firms. The two major contributions of local competition are:

1. *Incentive and Informational Benefits:* The immediate presence of a rival stimulates greater comparison, improvement, and upgrading versus competing with a firm in a foreign country. Companies that compete at home are better prepared to compete with foreign rivals abroad.
2. *Positive Externalities:* Geographic proximity of rivals generates otherwise unattainable positive externalities, such as a specialized labor pools, knowledge spillovers, specialized supplier formation, etc. discussed below.

The Positive Externalities of Local Rivalry. Competition creates positive externalities for the local business environment that boost productivity for the entire industry, and often for related and supporting industries in the same location as well. A group of competing local rivals tends to spawn a base of local suppliers and providers of specialized support services. This boosts productivity by reducing transactions costs, facilitating the exchange of information, increasing flexibility, and speeding innovation. Local rivalry also works to increase the local availability of specialized skills, infrastructure, scientific and technical resources, and other assets and institutions that boost productivity and raise the rate of productivity growth. As these externalities deepen, they can foster new entry and spinoffs, coming full circle to reinforce local rivalry. Such externalities are what give rise to what I term clusters, or geographic concentrations of interconnected companies and institutions in a particular field.

California wine provides a good example of a cluster (see figure 4). There are hundreds of wineries in California, but also thousands of independent growers of grapes. All the inputs, production equipment, and services required to grow grapes and produce wine are available locally. Local universities and other institutions provide ample skilled labor and technological information. As a result, the productivity of California as a wine-producing region in terms of yield per acre appears to be the highest in the world, and firms command high prices per bottle for their premium-quality products. The rate of productivity growth has been rapid, as California wine companies upgraded from jug wine to super premium segments.

Figure 4 The California Wine Cluster



Source: M.E. Porter, *On Competition* (1998), at ch. 7.

Other well-known examples of U.S. clusters include the Silicon Valley IT cluster, the Houston oil and gas cluster, and the Boston area biopharmaceuticals and mutual fund clusters.

The Global Competitiveness Report includes measures of the quality and quantity of local suppliers and, in the 2000 report the extent of clusters in a national economy. All three variables have a strong positive association with GDP per capita.

Taking into account the essential benefits of local competition leads to the conclusion that antitrust analysis should weigh not just the generalized benefits of rivalry for productivity growth but also the systemic benefits of *local* rivalry. When local rivalry is muted, a nation pays a double price. Not only will companies face less pressure to be productive, but the business environment for all local companies in the industry, their suppliers, and firms in related industries will become less productive. This demonstrates in particular the danger in arguments about the creation of “national champions” in an industry in the home country in order to gain the scale to compete internationally. Unless a firm is forced to compete at home, it will usually quickly lose its competitiveness abroad. Local competition matters for productivity and productivity growth, even in industries whose geographic scope is global.¹⁴

Note that no mention has been made of the ownership of the locally based firms. This is because ownership has much less importance for externalities than the nature of the activities undertaken in a given location. *All* firms in a given location must be considered part of the cluster, not merely the domestic ones. Special weight for competition derives from locally based entities that have significant development, production, and other activities located in a nation. These offer far greater potential for externalities than does competition from imports. Trade is not a full substitute for local competition.

¹⁴ See, e.g., *The Global Competitiveness Report 1998* (various authors) (Geneva: World Economic Forum, 1998); *The Global Competitiveness Report 1999* (various authors) (Geneva: World Economic Forum, 1999); *The Global Competitiveness Report 2000* (various authors) (Geneva: World Economic Forum, 2000).

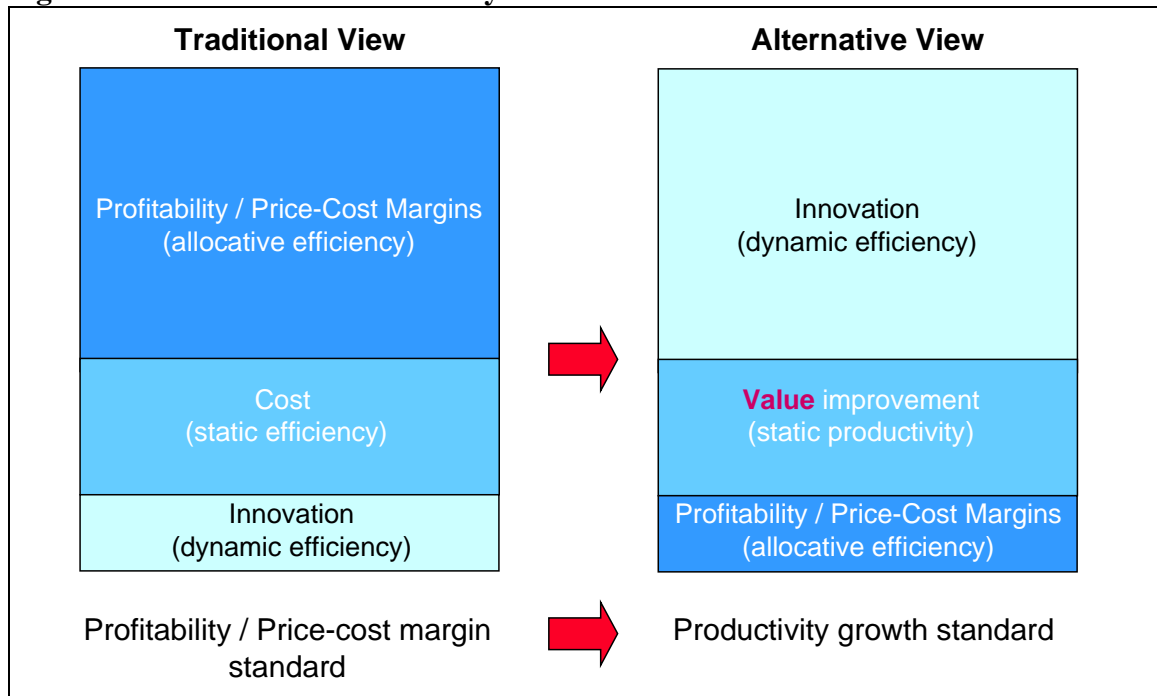
III - THE GOALS AND TOOLS OF ANTITRUST POLICY

III.1. New Standard for Antitrust: Productivity Growth

Since the role of competition is to increase a nation’s standard of living and long-term consumer welfare via rising productivity growth, *the new standard for antitrust should be productivity growth*, rather than price/cost margins or profitability. All combinations or practices scrutinized in antitrust should be subjected to the following question: how will they affect productivity growth? If a merger, joint venture, or other arrangement will significantly enhance productivity growth, it is probably good for society and for consumers (as well as the firms involved). Transactions with dubious benefits for productivity growth, or those that offer only a one-time productivity benefit, are likely to be net negatives for society if they pose any risk to the overall health of competition. This is because competition is a primary determinant of future long-term productivity growth.

How would the productivity growth standard affect antitrust? The current explicit and implicit goals of U.S. antitrust policy fall roughly into the following hierarchy (see figure 5). Drawing on Welfare theory, the primary focus in U.S. antitrust for the last twenty years has been on limiting price/cost margins or firm profitability (*allocative inefficiency*) as the most important outcome for consumers. Market power is seen as giving firms the ability to elevate prices and sustain high margins. Hence, limiting market power is the major focus of attention.

Figure 5 Goals of Antitrust Policy



Second in importance in antitrust evaluations has been cost or *technical efficiency*. The efficiency justification can be used to offset a finding of market power to elevate

margins. At the bottom of the current hierarchy is innovativeness, or the rate of dynamic improvement. The effect of mergers or competitive practices on the overall rate of innovation is usually only paid lip service.

If these three goals are tested against the productivity growth standard, it becomes clear that the traditional hierarchy of goals should be reversed.

Because of its direct effect on productivity growth, the most important goal for society is a healthy process of dynamic improvement, which requires innovations in products, processes, or ways of managing. If the rate of dynamic improvement is healthy, over time this dominates static technical and allocative efficiency concerns. For example, a faster rate of innovation in new approaches overwhelms static economies of scale in existing approaches, particularly in an age where knowledge-based competition is the rule.

A productivity growth standard suggests that technical (static) efficiency should be the second most important goal, but that it must be assessed with more subtlety. While antitrust analysis tends to focus on cost justifications, equal attention should be paid to product or service *value*. Roughly speaking, productivity is price times quantity divided by the quantity of labor or capital involved. It can be divided into two distinct components: the prices that products command in the marketplace (which reflect *value*) and the efficiency with which a unit of product can be produced. Thus, productivity is enhanced not just by efficiency improvements, but also by improvements in product quality, features, and services. Product variety is also an essential component of value, giving customers more choices to better meet their particular needs.

High-value products provide the consumer with superior performance and features, and therefore justify higher prices. With a focus on price/cost margins, however, high prices are often seen as inherently undesirable for consumers. Higher prices should be a danger sign in antitrust analysis only if they are not justified by rising customer value.

Limiting short-term price/cost margins or profitability is a dubious goal for antitrust. Firm profitability is a good thing if it reflects truly superior products or significant advantages in process technology or operating efficiency. It is a bad thing if it occurs in the absence of a healthy rate of dynamic improvement. In a typical industry, average price-cost margins and profitability will vary significantly among competitors, reflecting varying levels of fundamental competitiveness.

Short-term consumer welfare measured by price, then, is a dubious goal on two levels. First, it fails to measure true consumer welfare by ignoring product value. Second, we care much more about the long-term trajectory of value, prices, and costs than we do about consumer welfare in the short run or immediately after a merger. Moreover, a productivity growth standard is entirely consistent with the language of the main antitrust laws.

Benefits of a Productivity Growth Standard. Why is the productivity growth standard different and important for antitrust? First, it is a *positive* standard that relates directly to

competitiveness, a nation's standard of living, and long-term consumer value, while price/cost margins and technical efficiency are theoretically suspect. Productivity growth is also more understandable and palatable to managers. Imagine how much more constructive it would be for corporations and their attorneys to debate whether a merger will boost productivity growth rather than continuing to debate the size of HHI.

Second, a productivity growth standard would shift antitrust away from a narrow focus on static, short-term consumer welfare to a dynamic and more all-encompassing view of competition and its benefits to consumers, firms, and society as whole. Defining the goal of antitrust in terms of price/cost margins and profitability creates a zero-sum game between firms and consumers. If consumers are to benefit from lower prices, firms must earn lower profits. In contrast, a productivity growth standard raises no inevitable trade-off. If productivity is growing, consumers can enjoy better products and/or lower prices, companies can earn attractive returns on capital, and workers can enjoy rising wages. A productivity growth standard, then, unites the perspectives of consumers, workers, and companies. It embodies a positive sum rather than a zero-sum view of competition. An approach to competition based on productivity growth will lead to outcomes that benefit consumers far more than a shortsighted concern with static profitability.

Finally, productivity growth addresses the reality of high-technology industries and the so-called new economy by highlighting the fundamental importance of innovation. While there are few true conceptual differences between the "new" and "old" economies, the apparent mismatch between the static focus of antitrust and the rapid change in technology-intensive industries has undermined antitrust's legitimacy. Since innovation is the basic driver of productivity growth, promoting and protecting it should be central.

III.2. Analysis of competition

How would the productivity standard be applied in practice? The best way to attain maximal productivity growth in an industry is to ensure that industry competition is healthy, since competition determines long-term productivity growth. It is possible to measure past productivity growth in various ways, and we advocate that this become part of antitrust analysis. However, predicting *future* productivity growth is more difficult. Hence, there is a need for tools to assess the likely future health of competition, since this will be the single most important factor in whether future gains in productivity will reach their potential.

III.2.1. Measuring the health of industry competition: Five Forces Analysis

To measure the health of competition in practice, we agree with those who believe that seller concentration, the number of firms in a market, and profitability are not very good indicators.¹⁵ They capture only part of a complex phenomenon and divert analyses

¹⁵ See, e.g., Ewing, *supra* note 12; Harris & Smith, *supra* note 12; Weller, *supra* note 12.

of competition to much less productive debates over where to draw relevant market boundaries. Instead, a broader approach is necessary. One such approach with acceptance in business practice is the “five forces” analysis of the intensity of competition.

*The Five Forces Model.*¹⁶ The five forces model is a dynamic approach to analyzing industry structure, based on five competitive forces acting in an industry or sub-industry: threat of entry, threat of substitution, bargaining power of buyers, bargaining power of suppliers, and rivalry among current competitors.¹⁷

This approach, with roots in industrial economics but moving beyond its narrower interpretations, posits that competition in an industry is broader than price, and includes product features, services, and processes. Competition is also seen as driven by many influences. The five forces framework seeks to encompass all the important dimensions of competition (see figure 6). It embodies the notion that competition is much broader than just rivalry, where seller concentration (HHI) analysis is focused. Any of the five forces can be significant in determining the health of competition, depending on the particular industry. For example, the power of customers to push down price or pressure improvements in service can be just as important to productivity growth as the number and size distribution of competitors in the market.¹⁸

Five forces theory also argues that for any one of the competitive forces, the causes of competitive intensity are multidimensional. In assessing the intensity of rivalry, for example, seller concentration does have a role, although our interpretation would focus more on the *balance* of competitors (the more balanced, the more rivalry). But the intensity of rivalry also depends on a series of other dimensions, including, for example, the industry cost structure. Where variable costs are low, strong pressures are created to cut price in order to contribute to fixed cost. With such a cost structure, even a concentrated industry can exhibit strong rivalry. Switching costs are another important influence on rivalry. Where it is easy for customers to shift from one supplier to another, the effect of concentration is mitigated.

The five forces methodology involves analysis on an industry-by-industry basis, and does not rest on the determination of *the* relevant market. Every industry is different,

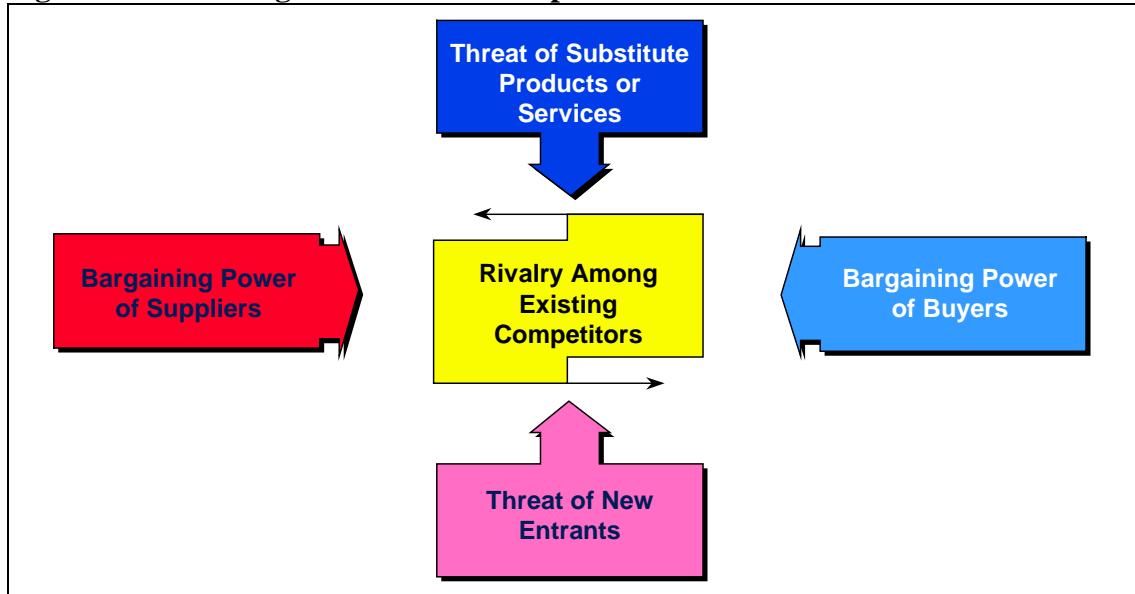
¹⁶ There is an extensive literature on five forces analysis that is beyond the scope of this article to summarize here. The early references are M.E. Porter, *Interbrand Choice, Strategy, and Bilateral Market Power* (1976); M.E. Porter, *Competitive Strategy: Techniques for Analyzing Industries and Competitors* (1980).

¹⁷ Brandenburger and Nalebuff have appropriately stressed the role of complementary products in competition, and some have suggested complementary products as a sixth force (A. Brandenburger & B. Nalebuff, *Co-opetition*, (1996)). However, complementary products do not directly influence the health of competition, but affect it indirectly through the influence of complements on the five forces. The presence of a complementary product is neither good nor bad for competition per se. It depends on how the complement influences, for example, barriers to entry or the power of the customer.

¹⁸ There is substantial empirical support for the importance of this broader set of industry attributes for competition.

both in terms of the relative influence of the forces and the array of drivers of each force. This approach, which squares with actual industry competition, has been well accepted in corporate practice and in management consulting firms to assess the nature of industry competition.

Figure 6 Assessing the Health of Competition: Five Forces Framework



Source: M.E. Porter, *Competitive Strategy: Techniques for Analyzing Industries and Competitors* 187 (1980).

Many of the elements of the five forces approach have been known to or used in economics for a long time. Also, many of the considerations raised in the five forces model appear somewhere in current merger analysis. Five forces analysis is different in *how*, *when* and *why* the model is applied. Current antitrust analysis first determines the relevant geographic and product market, then uses its tools to analyze competitive effects. Current analysis starts with seller concentration as the principal metric. Other considerations are brought in, both only later and secondarily. Five forces analysis, on the other hand, avoids the first step by going straight to analyzing competitive effects in any and all submarkets deemed relevant by customers and competitors. It views seller concentration as only one and not the most important determinant of rivalry. It brings in all five forces as equally important. Finally, it does not rely heavily on price and quantity as the principal indicators of welfare.

By assessing competition beyond existing rivals, the need is reduced for debates on where to draw industry boundaries, or the relevant market in antitrust terms. Any definition of a market is essentially a choice of where to draw the line between established competitors and substitute products, between existing firms and potential entrants, and between existing firms and suppliers and buyers. If these influences on competition are all recognized, and their relative impact assessed, as they are in five forces analysis, then where the lines are actually drawn becomes more or less irrelevant to strategy formulation and, I suggest, the antitrust analysis of competition. Latent sources of competition will not be overlooked, nor will key dimensions of competition. The need to determine *the* relevant market is eliminated.

While there is a systematic approach to market definition defined in the Merger Guidelines, it begins with the questionable premise that *a single* market definition is a meaningful concept. Moreover, the approach to market definition relies heavily on price effects which are an incomplete measure of social benefit, not to mention a largely short-term and static one.

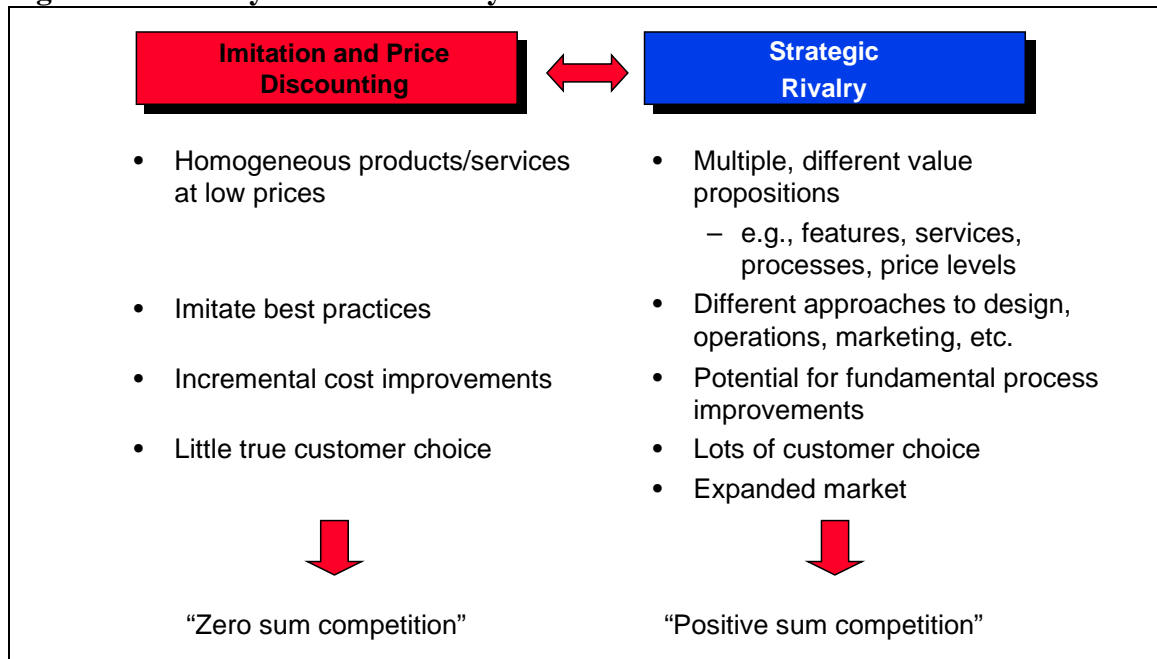
Productivity Growth and Forms of Competition. The multidimensional nature of rivalry is important for understanding the link between rivalry and productivity. Some forms of rivalry are more productivity-enhancing than others, and thus are more valued socially.

For example, one can array *types of rivalry* along a spectrum including the following (see also figure 7):

1. Competition based on imitation/price discounting
2. Competition based on strategic positioning.

The first type of competition is on *operational effectiveness*, or the extent to which companies approach best practices in areas such as production processes, technologies, marketing methods, and management techniques. The second, and more fundamental to success in an advanced economy, is competition to create different value propositions for customers, a function of the degree to which companies have *distinctive strategies*.

Figure 7 Rivalry and Productivity Growth



Assessing the two according to the productivity growth standard gives very different results. Imitation-based competition leads to similar products among rivals and strong pressures for price discounting. Strategic competition occurs when rivals pursue different

value propositions: some firms offer low prices producing stripped down products, others have higher prices but provide better service, while still others concentrate on various segments of the market, tailoring their products and value chains accordingly.

If price/cost margins are used as the metric of social benefit, then imitation and price discounting seem ideal. Customers get the benefit of low prices, and the ability to play one company against others. From a productivity growth standpoint, however, this form of competition may lead to slower dynamic improvement. Competition on strategic positioning can foster increased variety and greater choices for customers in terms of the product that best meets their needs, not to mention more innovation in products and processes. In strategic competition, markets often expand as new needs are met and new customers are drawn into the market. It is important to note that internationally competitive, advanced nations have more innovation- and differentiation-based competition, while less competitive nations tend to compete on imitation and price.¹⁹

This analysis leads to the controversial conclusion that holding down profitability is the wrong issue for society. Profitability has a contingent relationship with productivity growth. The American software industry is far more profitable than the software industries in other countries, but it is also far more productive and internationally competitive. High profits are fine, provided competition is healthy and there are strong pressures for dynamic improvement. The productivity growth standard, then, casts new light on how we assess competition. It reveals the importance of understanding the kind of competition a nation should really be looking for.

III.2.2. Measuring the health of local competition: The Diamond framework

As has been argued, it is not sufficient to consider only industry competition generally. We must also have a means of gauging the health of *local* competition. Here, one such approach to assessing the potential productivity of a local business environment is embodied in the so-called diamond framework.²⁰

The productivity of a national business environment can be modeled using four interacting components that can be depicted as a diamond (see figure 8). These are:

1. Context for firm strategy and rivalry
2. Factor (input) conditions
3. Demand conditions

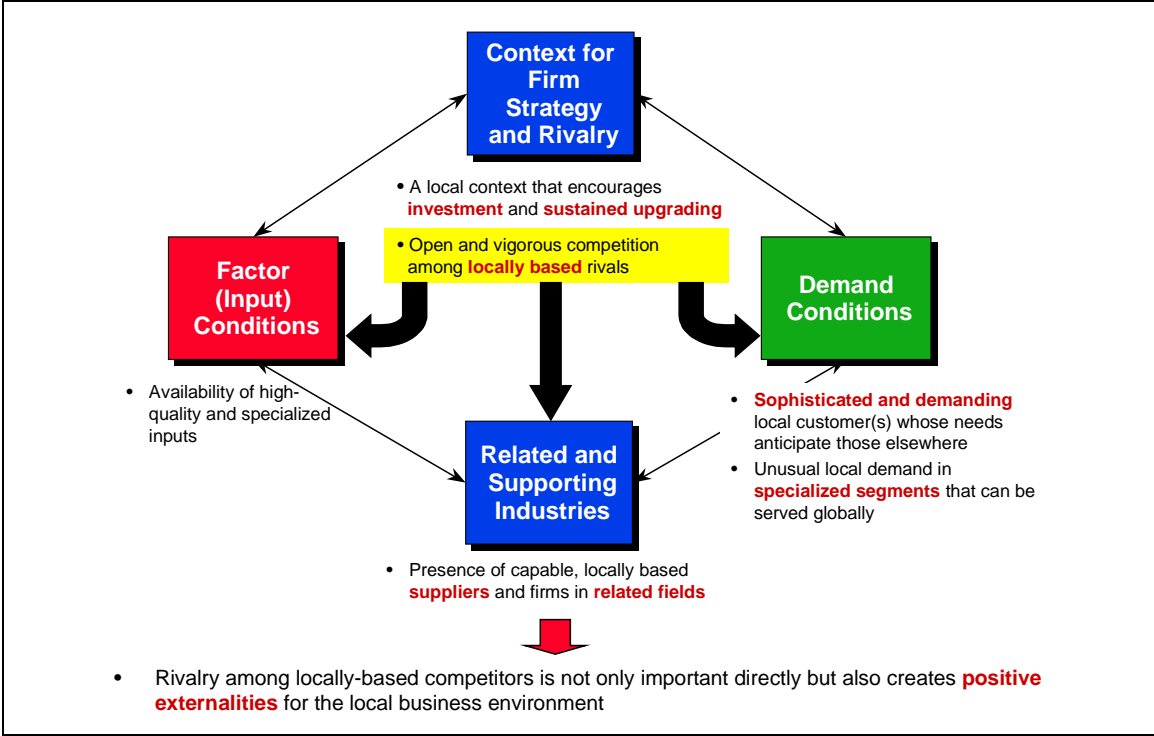
¹⁹ For supporting statistical findings, see Porter, *supra* note 5. Results are similar in previous years' reports. See the full *The Global Competitiveness Reports* for 1998, 1999 & 2000; and Porter, Takeuchi & Sakakibara, *supra* note 7.

²⁰ M.E. Porter, *The Competitive Advantage of Nations* (1990). For the empirical application of Diamond theory to 59 countries, see *The Global Competitiveness Report 2000*, at 40-58, 101-221, including data definitions and sources at 223-333. For 1998 and 1999, see *The Global Competitiveness Report* for those years. For an extensive empirical application of Diamond theory to Japan, see Porter, Takeuchi & Sakakibara, *supra* note 7.

4. Related and supporting industries

Like the five forces, this framework aims to capture the many influences on the productivity of the local business environment in an industry or overall. Rivalry among locally based competitors is not only important to productivity growth directly but also creates positive externalities for the local business environment. A group of competing local rivals helps customers become more knowledgeable and competitive, encourages more specialized suppliers to develop, and enhances the local supply of high-quality, specialized inputs. This gives rise to a series of new questions that must be addressed in analyzing the impact on competition of a merger or other competitive practice, which will be discussed below.

Figure 8 The Externalities of Rivalry: Locational Determinants of Productivity and Productivity Growth



Source: M.E. Porter, *The Competitive Advantage of Nations* 133 (1990).

IV. EVALUATING MERGERS AND JOINT VENTURES

IV.1. Why mergers should be of particular concern for antitrust

Where productivity growth is the central goal of antitrust, it becomes clear that mergers should be treated with special caution compared to other corporate growth strategies. This is true for five reasons:

First, mergers raise almost inevitable issues for the health of competition by removing independent competitors from the market. The question is not whether there is a risk to competition, but how much. This risk stems from the potential lessening of competitive pressure among firms in the industry, the potential reduction in product choice and variety, and the reduction in the number of different approaches being pursued to product/process development and hence the likelihood of innovation.

Second, a merger requires no “skill, foresight, and industry,”²¹ only financial resources. It demands no new strategy, and yields no automatic productivity improvements. By contrast, introducing a new product, changing a distribution model, or building a new plant are far more likely to boost productivity. Society, then, should be biased in favor of independent company actions over mergers.

Third, the empirical evidence is striking that mergers have a low success rate. A wide range of studies finds that most mergers do not meet expectations, and most of the profits are captured by the seller, not the buyer.

Fourth, the strategy literature suggests that smaller, focused acquisitions are more likely to improve productivity than mergers among leaders. When a large company buys a small company and integrates it into its strategy, major productivity gains are possible. Mergers among large companies appear to rarely yield such benefits, though they may produce reduction in joint overhead and eliminate major competitors from a market.

Fifth, there are strong financial market pressures favoring mergers over other growth strategies. These arise at least in part from agency problems afflicting both investment managers compensated based on near term stock price appreciation, and company executives given incentives with stock options.

Finally, accounting rules make merger a vehicle for distorted performance measurement, creating artificial pressures for companies to merge.

We cannot assume that a merger will be efficient and profitable just because companies propose it. Companies make mistakes. Every merger needs to be weighed against the productivity growth standard. Indeed, a positive antitrust policy based on

²¹ *U.S. v. Aluminum Co. of America*, 148 F.2d 416, 430 (2d Cir. 1945) (Hand, J.).

productivity growth might actually enhance both the performance of companies and consumer welfare, which would be even better for society.

IV.2. Towards a New Merger Evaluation Process

In dealing with a proposed merger, the primary concern for antitrust should be how the merger, if allowed, would affect productivity growth. We must consider both likely future productivity growth in the industry, as well as the near term productivity impact on the merged firms. The effect of the merger on the health of competition will be central to its likely productivity impact, net of any direct positive productivity growth impacts that can be convincingly demonstrated.

Three Levels of Analysis. In analyzing a merger or joint venture then, the three basic levels of analysis needed are:

1. Merger significance and baseline productivity growth analysis.
2. The effect of the transaction on the *health of competition* using the five forces and the diamond framework in *all* significant markets and submarkets that are relevant based on industry and customer practice.
3. A risk/reward analysis of the merger, where its effect on the health of competition is weighed against proposed direct benefits using the productivity growth standard.

IV.2.1. Significance and Baseline Productivity Growth Analysis

This analysis can be broken up into three principal tasks: (1) identifying the set of relevant markets and submarkets and the relevant geographic area; (2) determining whether or not the firm meets a predetermined combined market share cutoff in the relevant markets and submarkets; and if so, (3) establishing the baseline productivity performance of the industry and the firms party to the transaction.

Step 1. Rather than going through the lengthy and controversial exercise of trying to define *the* market affected by a merger, this new merger evaluation process is applied to *all* relevant markets and submarkets. There are usually a number of economically relevant market definitions, and each of these is considered. In determining plausible markets or submarkets, three practical criteria can be helpful:

1. How the industry itself defines submarkets
2. How consumers segment the market
3. Whether there is a competitor focused on the submarket (i.e., a focused company dedicated only to serving the submarket, which suggests that it is a viable array of products, varieties, and customers with distinct needs)

Once all plausible markets and submarkets have been identified, the geographic area over which local externalities apply is determined. Note that the relevant geographic area is not based on the geography of sales, but on the externalities in production. The starting assumption is that the geographic unit is the national economy. In some industries, the relevant geographic area can be smaller than a nation. Clusters occur within a region or metropolitan area. In some cases, externalities can cross national borders of immediate neighboring countries.

Step 2. To invest the resources required to investigate a particular merger or joint venture, some significance threshold is inevitable. We advocate a relatively low minimum market share threshold of, say, 25 percent combined share in any submarket (discussed below). Such a threshold will conserve resources and screen out transactions where the probability of material impact on competition is small.

There is no contradiction between this cut-off level and our rejection of seller concentration as a measure of market power. We use concentration solely as a significance indicator. A merger involving a small portion of any submarket is unlikely to raise important antitrust issues. Above this threshold, we do not treat higher share mergers differently than ones with somewhat lower shares.

Step 3. This step establishes the baseline, historical industry and company performance in terms of productivity growth and robustness of rivalry. For this we look at direct measures of productivity, such as revenue per hour of labor, value added per unit of capital, etc. In order to test the vitality of rivalry in the industry, the fluctuation of market shares in all relevant markets and submarkets are examined. Needed data would be requested in the premerger notification process.

If the affected industry has registered weak productivity growth in the past relative to the economy-wide or industry averages, or if the industry has exhibited limited rivalry historically, this should raise the level of scrutiny by antitrust authorities. If the firms involved in the merger have registered weak or average productivity growth performance relative to the industry, this would raise the level of scrutiny. If substantial past market share fluctuations have involved the party firms, this would raise the level of scrutiny as well because the merger may be an attempt to stabilize competition. The baseline performance step is a retrospective analysis, providing grounding for the prospective analyses described below.

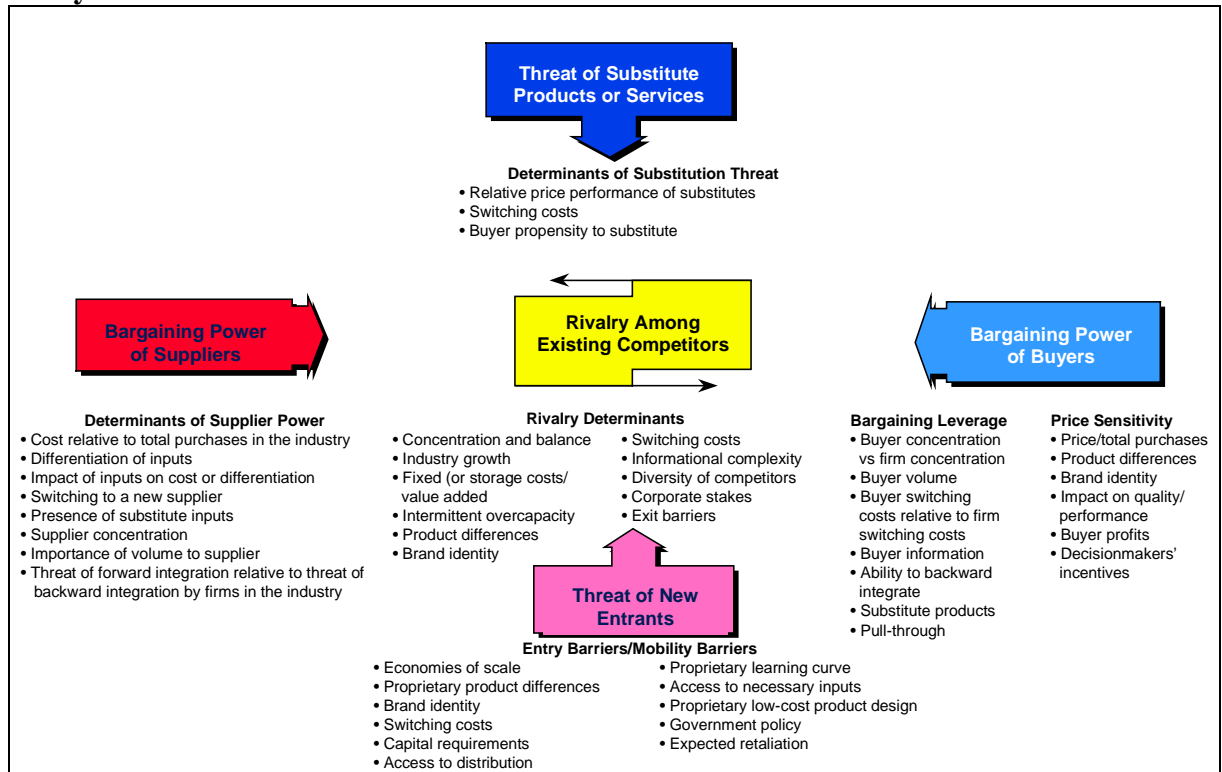
IV.2.2. Assessing the Health of Competition

The next level of analysis is to predict the effects of the merger on long term productivity growth by determining its effects on the health of competition. Five forces analysis is used to measure the health of industry competition in all relevant markets and submarkets, while the diamond framework is used to measure its likely effect on the

health of local competition. If both lead to the conclusion that there is no material negative effect on competition, the merger or joint venture would be approved. If either analysis raises questions, the process would move to the next stage.

Five Forces Analysis. Here the effect of the merger or joint venture on barriers to entry, rivalry, customer power, substitution, and the power of the suppliers would be explored. The analysis should be conducted for *all* relevant segments and submarkets.

Figure 9 Merger Effect on the Health of Industry Competition: Five Forces Analysis



Each of the five forces is affected by a series of drivers (see figure 9). Every one of these factors must be assessed in turn. The starting point is to establish the level of each driver and the direction in which it is moving (i.e. increasing, decreasing, or stable) before the merger, then determine whether and how the merger will affect these. Often the effect of the merger on a particular driver can be quantified precisely. At the very least it is possible to ascertain whether the effect is positive, negative, or neutral, and whether the effect is likely to be significant or modest. A particular merger, for example, might have a strong tendency to raise barriers to entry. One is normally able to estimate the increase in minimum scale. The size of the increase would be weighed against shifts in other forces. If all other things remain equal, the merger's effect would be judged negative. If buyer power or the substitution threat was rising, however, the analyst would assess whether the magnitude of the effect was offsetting.

The role of “Concentration and Balance” in rivalry may appear similar to market share analysis. However, even here there are substantial differences. First, seller concentration is only one of the many determinants of rivalry. Second, we are mostly interested in the balance between competitors and how this affects rivalry, not shares per se. Third, we are less interested in market shares than in the *fluctuation* of market shares. Finally, the types of rivalry prevalent currently and likely in the future are considered with their differing effects on the growth in productivity.

The five forces approach offers several advantages in evaluating merger or joint venture transactions in contrast to using seller concentration and HHI analysis. First, the broader analysis is more intuitively appealing as a representation of competition. Seller concentration and HHI analysis is arcane and can be arbitrary. It is prone to attempts at manipulation and gaming.

Second, five forces analysis is based on a rich conception of competition, which is multidimensional and not based only on price. Managers know that seller concentration is not the dominant influence on competition. As has been discussed, price competition may not be the most beneficial form of rivalry for productivity growth.

Third, the five forces framework can and should be readily applied to any and all market definitions. It can be applied to the industry as a whole, and to any segment (a segment can be a particular customer group, subset of product varieties, or combination of the two). Barriers to entry into a segment, for example, may be higher or lower than barriers to entering other segments; and substitute products often vary by segment as well. The definition of the industry can be expanded to include substitutes, customers who are partially backward integrated, or some potential entrants. With five forces methodology, it matters less where industry boundaries are drawn because the framework encompasses all the important influences on competition.

Fourth, five forces analysis is very fact-intensive, and its conclusions depend on the particular fact pattern in an industry rather than generalizations embodied in HHI or seller concentration cutoffs. Every industry is unique, and requires analysis of its own particular characteristics. The five forces framework can be seen as an expert system; it takes the facts of a particular case and translates them into the implications for competition.

Finally, the five forces framework also allows an assessment of both near-term and long-term effects on competition. In industry competition, it is rare that the first move is the end state. When a merger takes place, for example, it can trigger mergers by others. A good analysis considers what could happen next, and weighs its consequences for industry structure. Concentration analysis, in contrast, tends to be short term and static.

It might be argued that many of the considerations revealed in five forces analysis are considered in the existing merger evaluation process by skilled practitioners. This is certainly true, but this proves rather than argues against its usefulness. Existing merger analysis is hamstrung by an unclear and questionable central goal (limiting short-term price-cost margins), and the process is built on HHI, a questionable measure of competition. Other considerations come in only later, and as adjustments and balancing

arguments. This indirect approach seems less reliable in weighing the issues than a frontal approach. Moreover, since these additional considerations are not clearly stated in the Merger Guidelines, they are not transparent to companies, making the entire process appear arbitrary.

Current merger evaluation is also compromised by its reliance on short-term price and quantity analysis. The result is a sort of false precision, in which tools like merger simulation seem to be exact but assume a stylized model of competition based solely on price and quantity and say little about what will occur in the long run.

Performing five forces analysis requires significant effort in terms of data collection and analysis, which some argue would pose challenges to antitrust authorities with limited resources. However, a skilled practitioner can reach informed judgements based on a modest number of industry interviews and secondary sources, and the approach allows effort to be quickly focused on the most important issues. Moreover, the current merger evaluation process involves enormous effort in determining and litigating relevant market and concentration. The proposed merger evaluation process may in fact prove less burdensome for antitrust authorities than current practice and the effort involved more fruitful in terms of understanding the true competition issues facing the affected industry.

Diamond Analysis. We apply the diamond analysis to determine the effect of the merger on the productivity of the local business environment.

Figure 10 Merger Effect on the Health of Local Competition: Diamond Analysis

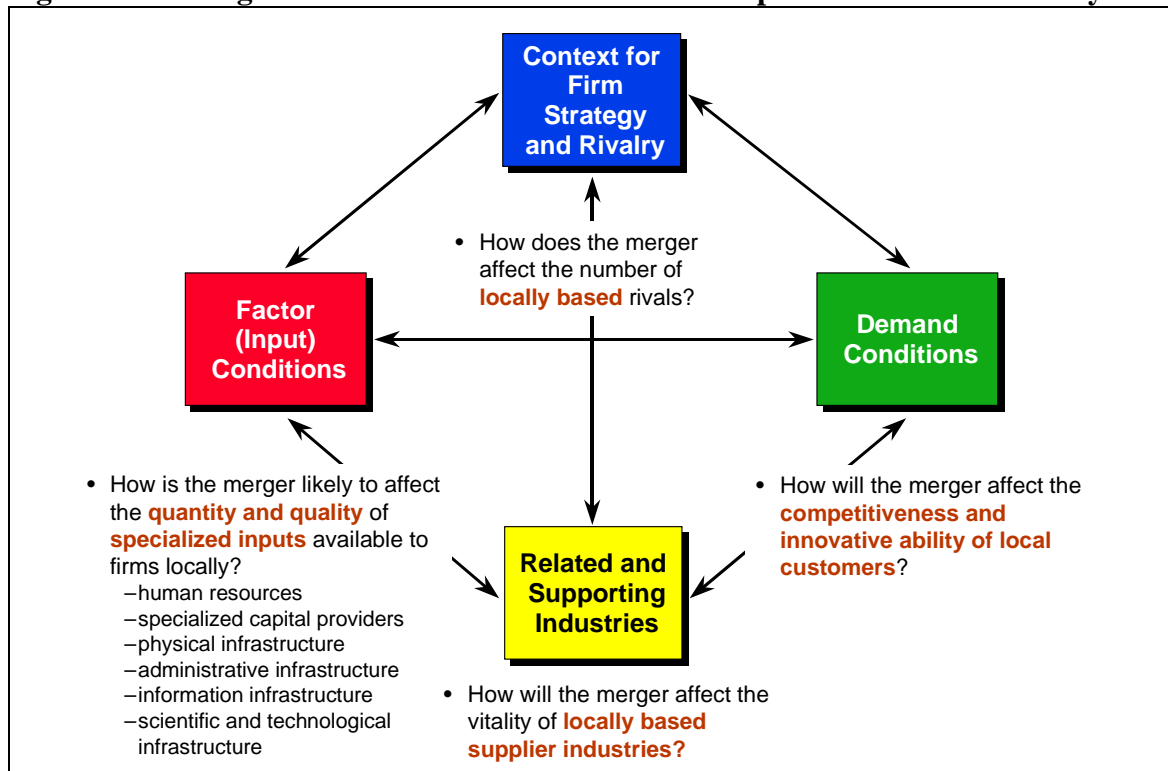


Figure 10 highlights the questions to be considered. For example, a reduction of local competition due to a merger can hurt competition and productivity in customer industries. Cut off from close relationships with independent, locally based vendors, customers can become less productive and or their ability to innovate can decline.

Diamond analysis points again to how misleading a focus on seller concentration can be compared to a focus on productivity growth. Global industry definition is invariably invoked to minimize the concentration effects of mergers. However, if competition is diminished in the local market, the adverse consequences for productivity can be substantial. While there can be static efficiency benefits of a merger between large national rivals that are often emphasized, these tend to be one-shot benefits that are less significant than the consequences of the merger for productivity growth.

Taking into account externalities in local competition leads one to be particularly wary of a merger between a leading international company and a leading domestic company, especially when the domestic company will be integrated and important activities will be moved to other locations, thereby diminishing potential local externalities. International companies seeking to acquire a local company should be encouraged to acquire a smaller competitor. This would reduce the risk of diminishing local rivalry, and may actually increase it.

IV.2.3. Direct Productivity Growth Offsets

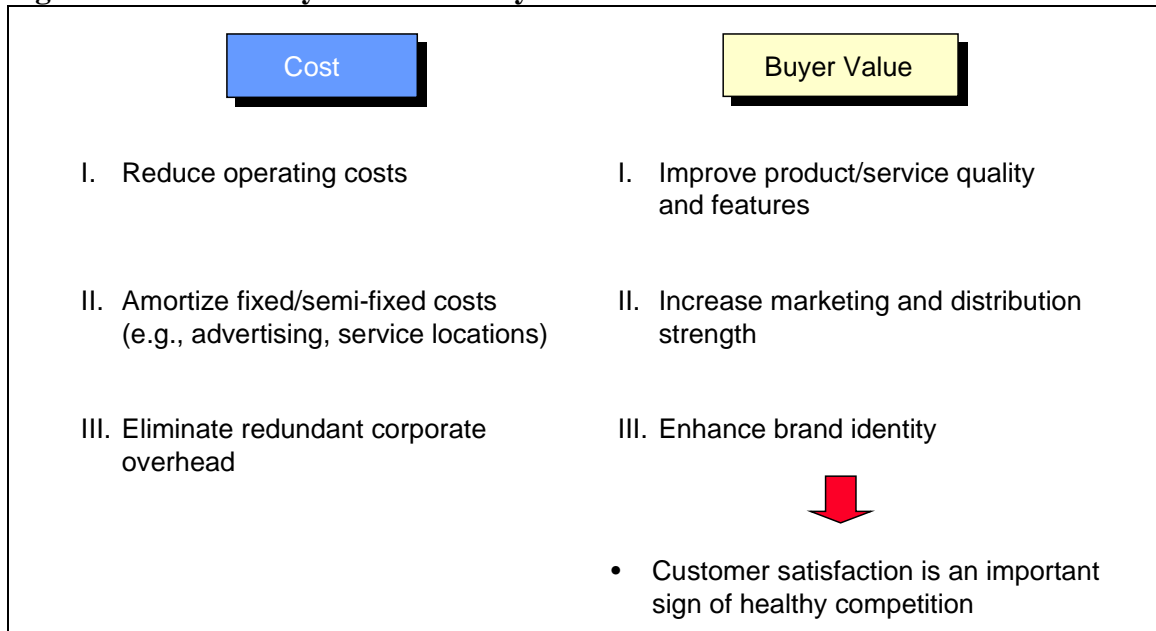
If it is determined that there is a significant potential adverse effect on the health of competition in the short or long term in *either* industry competition or local competition, the direct effect of the merger (or joint venture) on productivity growth would be assessed. Key questions would include the following: Are there clear and significant productivity growth benefits that can be demonstrated? Are these productivity gains ongoing or one time? How likely are they to occur? Here, the parties would be expected to demonstrate fundamental and lasting productivity growth benefits along the lines discussed below. A risk/reward analysis would then determine whether the merger or joint venture is approved by the government, or lawful under the antitrust laws. Clear productivity growth benefits from the merger or joint venture would be necessary to outweigh the threat to competition that the merger entailed.

Potential direct productivity benefits should be evaluated according to the hierarchy depicted in figure 11. Productivity enhancement consists of both product value (which is usually reflected in price), and efficiency (or cost). Both are important, and priority must be given to dynamic improvements over static ones.

Companies often tout the fact that mergers reduce costs, but what they really mean in many cases is that the merger will allow elimination of redundant corporate overhead. This form of cost reduction is marginal for productivity growth because it is a one-time benefit and does not affect the inherent operating cost of producing and delivering a product or service. A merger that leads to ongoing savings in the actual operating costs of the business is much more attractive in meeting the productivity growth standard. A merger that creates greater scale over which to amortize largely fixed costs such as media

advertising falls somewhere in between. The productivity growth standard therefore casts new light on the efficiency justification for mergers and other practices.

Figure 11 Hierarchy of Productivity Enhancement



In addition, post-merger reductions in operating costs that involve a rationalization of product lines may actually involve a reduction in product variety. The improvement on the cost side results in deterioration on the value side, which must be considered in the overall assessment.

On the value side, mergers with clear and demonstrable benefits for the quality and features of the actual product or service should be favored. These are likely to be far more meaningful to productivity and productivity growth than those that only improve marketing or strengthen distribution. The latter benefits usually come at the price of higher barriers to entry and reductions in productivity growth over time.

Productivity growth analysis focuses on the long-term *trajectory* of product value and cost, not only on perturbations to current productivity. One-shot benefits to productivity are overwhelmed if a merger or other arrangement risks lowering the rate of productivity growth.

The threshold for offsetting direct productivity benefits would be higher if:

1. The merger produced a dominant firm;
2. Past productivity performance of the industry or party firms was weak;
3. The party firms have been direct and vigorous rivals.

Justifications based on network effects and Schumpeterian competition for the market. Opponents of strong antitrust enforcement frequently argue that pervasive network effects dominate the so-called new economy, making large, dominant firms

unavoidable in many “high-tech” industries. This argument is sometimes used to defend mergers that create a dominant firm, since consumers are expected to benefit from dealing with a larger network.

Network effects exist when an industry is marked by economies of scale in consumption, that is, when a product or service is more valuable to an individual customer the more total customers there are. Examples include telephone service, fax machines, e-mail, etc. Network effects can and should be analyzed in context of the five forces, for instance when discussing barriers to entry, or the nature of rivalry.

Network effects are not new, and there is little systematic evidence that they are more pervasive in high-tech industries than traditional ones. Furthermore, network effects are often not proprietary to individual firms, and are self-limiting to the extent that customer needs vary within the industry. Substantial network effects large enough to support a dominant position appear to occur only in a very small subset of industries. There is no need for mergers as a growth strategy if there are true proprietary network effects. Firms should be required to grow internally instead. In the rare case of proprietary network effects leading to a dominant firm that is able to block entry, antitrust policy should require interoperability or an open standard, unless a compelling case can be made that keeping the standard proprietary leads to faster growth in productivity.

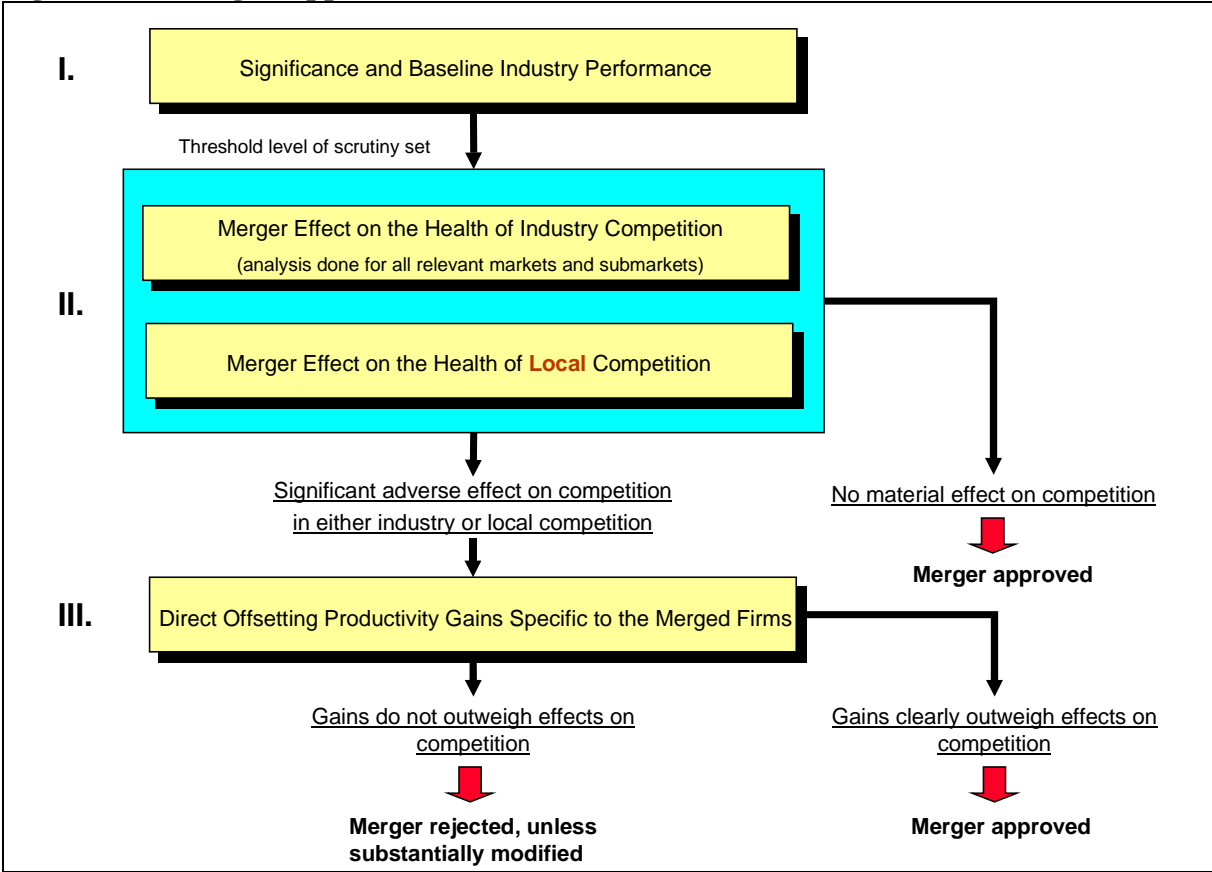
In parallel to the discussion of network effects, the claim is often made that these same high-tech industries are characterized by Schumpeterian competition, in which frequent drastic innovations disrupt the market, creating new winner-take-all races. The presumed high frequency of these innovations is asserted to prevent currently dominant companies from establishing long term monopoly positions. Therefore, it is argued, antitrust should not intervene in high tech industries with large dominant firms, since corrective forces will work to overturn them naturally.

A Schumpeterian focus on innovation is essential, and highly supportive of a move to productivity growth as an antitrust standard. However, using Schumpeter as a justification for ignoring anticompetitive behavior or for allowing mergers among leading competitors dramatically underestimates the time between market-disrupting occurrences, even in high tech industries. In truth, drastic innovations in industries occur only once every few decades, so that dominant positions create substantial costs to productivity growth and to society. It should also be noted that mergers are anti-Schumpeterian. Far from reflecting true innovations, they tend to entrench established companies and temper the rate of innovation occurring in an industry. Therefore, the above argument is spurious in attempting to justify mergers.

IV.3. The Process Summarized

Figure 12 provides a summary of this merger evaluation process.

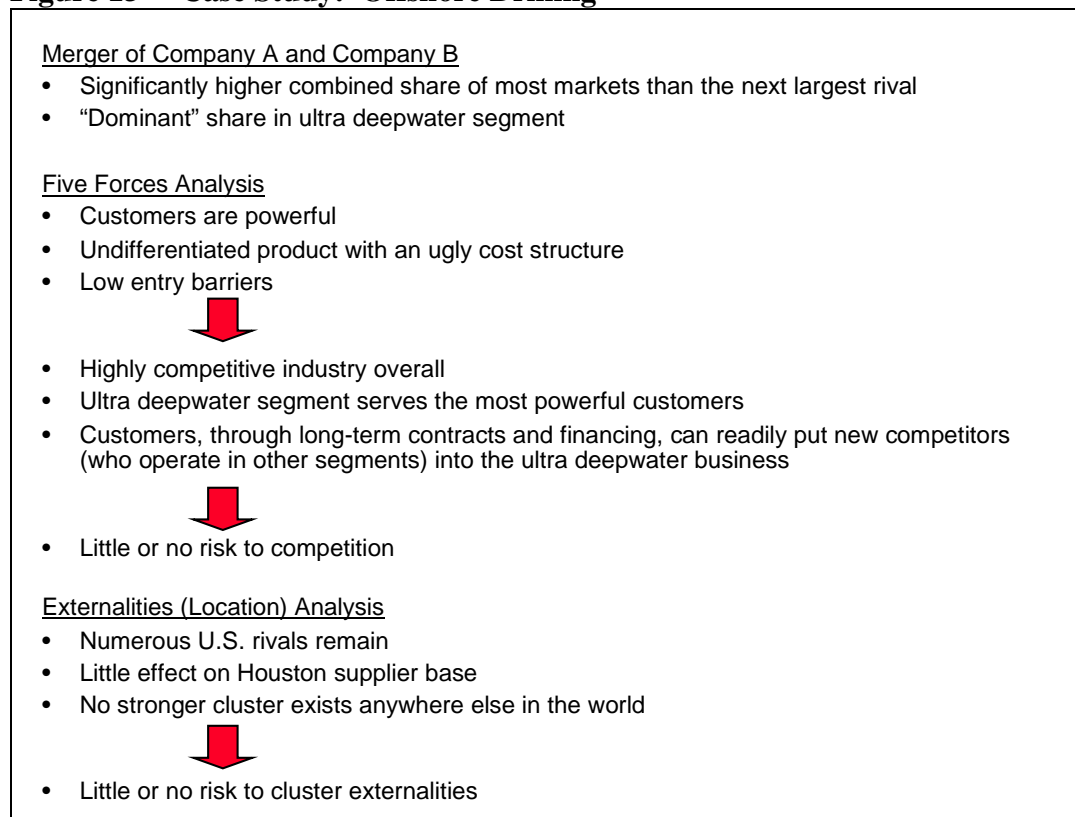
Figure 12 Merger Approval Process



V. MERGER CASE STUDY

Figure 13 offers a brief case study of this analytical process, based on a merger between two offshore drilling companies. In this industry, firms operate highly capital-intensive drilling units that cost up to \$500 million apiece. The merger of companies A and B would create a combined company with the highest overall share of the industry, and a dominant share in one large, important segment. On the surface, the merger looks troubling. Using the standard approach of defining submarkets and calculating HHI, it fails.

Figure 13 Case Study: Offshore Drilling



Five forces analysis reveals, however, that customers in the industry are very powerful, major oil companies. They can put new rivals into business and, through long-term contracts, can also cause new drilling units to be constructed. Rigs are essentially undifferentiated and have high fixed costs. Low marginal costs make the business prone to deep price discounting. Assets can be easily moved from one geographic market to another. Although it would seem that the high asset costs create formidable barriers to entry, since powerful customers can use long-term contracts to put companies into new segments and rig technology is widely available, actual entry barriers are modest. The segment in which the merger would yield a dominant share also proves to be the segment with the most powerful customers.

The merger also raises few concerns for locational externalities. Post-merger, numerous U.S.-based offshore drillers would still be present. New entry remains feasible. There is little likely effect on suppliers or other Houston-based institutions. Moreover, there is no other location in the world with a close to comparable critical mass of rivals, suppliers, and other institutions.

An analysis beginning with HHI could certainly reach the same conclusion. However, there can be much wasted effort and unproductive discussion. Also, antitrust lawyers are drawn to concentrate on the HHI analysis because it is highly specific and comes first in the process, with other subsequent “considerations” far less transparent.

To implement the five forces and locational approaches, a body of examples and guidelines for quantification and weighing various factors will be needed. This can be developed in subsequent papers, drawing on the large body of experience in corporate and economic development practice.

VI. ADDITIONAL U.S. ANTITRUST ISSUES

In the United States, the role of antitrust in limiting anticompetitive mergers and joint ventures that threaten industry productivity growth could be reinforced by a number of other public policy changes. One is eliminating pooling of interest, a policy which is currently being implemented. Pooling-of-interests accounting obscures the financial consequences of a merger, and allows companies to report post-merger profit improvements that are misleading.

Stricter rules on merger write-offs and restructuring charges would also limit uneconomic mergers. If the purchase price of a merger can be partly written off, the ongoing reported ROI can be artificially high. Since companies must invest the full purchase price to acquire a company, the full purchase price should appear as an investment on the books. Restructuring charges and write-offs are artificial adjustments that do not make the amount of the investment any different.

Third, new reporting requirements that mandated ongoing disclosure of total equity investment before write-offs would produce a better understanding of true return on shareholder investment. A company that generates improving returns by writing off a substantial part of its investment will be recognized for what it is, a company that has not used shareholder capital very well.

Finally, a comprehensive data set on mergers and their longevity and outcomes would be useful and potentially revealing. In a 1987 paper, I examined the merger history of a sample of companies back to World War II, and calculated the share of mergers that were liquidated or divested.²² This proportion turned out to be well over 50 percent of all transactions. Data such as this would sensitize managers and investors alike of the risks of these transactions.

Today, an unhealthy situation has been created in which distorted reporting leads shareholders to believe that bad mergers are good. This then leads managers to pursue mergers with no real productivity benefits, and sets up a contest with antitrust officials to get such transactions approved.

²² M.E. Porter, "From Competitive Advantage to Corporate Strategy," *Harvard Business Review*, May-June 1987, at 43. See also Scherer, "Some Principles for Post-Chicago Antitrust Analysis," 52 *CWRU Law Rev.* 5, 11-12 (2002) ("study after study" has shown that the acquiring company's stock price "decline[d] by impressive and statistically significant magnitudes in the one to three years" after the merger; see also Frank & Sidel, "Firms That Lived by the Deal Are Now Sinking by the Dozens" A1 (June 6, 2002).

VII. CONCLUSION

The current approach to antitrust rests on questionable and often unclear foundations, giving its numerous critics reason to condemn it as unnecessary or, at worse, harmful. However, antitrust is more crucial than ever in an economy characterized by dynamic competition. By adopting a productivity growth standard, antitrust would better link the health of competition to not only consumer welfare but to competitiveness and national policy, making the rationale for vigorous competition much more convincing.

The productivity growth approach aims to define an explicit hierarchy of goals for antitrust law and policy, and a framework that leads companies contemplating mergers to confront the issues that are important for society, firms, and their shareholders, as well as for consumers. The pressing need is that corporate discussions with government and the bases for litigation be focused on the right issues. We should not be debating the size of the company, the market definition, nor what the “correct” HHI should be. We should be debating the merger or joint venture’s impact on productivity growth and on the health of competition, using tools that capture the richness of competition and match with the reality faced by firms.

This new approach would better align the interests of consumers, companies, workers, and the overall economy, as sustained productivity growth is the desired outcome for all parties. Today’s antitrust is too often a contest between firms and the government; a broader, richer analysis of competition based on productivity growth standard could change that. Indeed, the productivity growth standard demonstrates the surprising underlying symmetry between companies’ interests, consumers’ interests, and society’s interests. A strong antitrust policy that correctly articulated this symmetry would encounter far less resistance than current policy. Even if all aspects of the new approach are not adopted, there is an urgent need to move toward reversing the current hierarchy of goals in antitrust and adopting a productivity growth focus.